

Inventor: Nitesh Ratnakar
Serial No.: 10/711,859
Filed: October 11, 2004
Title: Dual View Endoscope

IN THE DRAWINGS:

Please amend the drawings as shown on the attached sheets.

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REMARKS

This response is believed to satisfactorily address the issues raised in the Notice of Non-Compliant Amendment, and entry of the Amendment electronically filed on February 11, 2008, along with the amendments provided in this response is respectfully requested.

Initially, it is noted that the Examiner has requested that Figs. 1-4B be amended to add a legend identifying such figures as "Prior Art." Applicant has amended the drawings as suggested by the Examiner and withdrawal of the Examiner's rejection is respectfully requested. The Examiner has also requested applicant to amend the Abstract to eliminate all occurrences of the phrase "the present invention" and to reduce the length of the Abstract to a single paragraph. Further, the Examiner has requested that Applicant amend the Abstract to eliminate any reference to the purported merits or speculative applications of the invention. Per the Examiner's request, applicant has amended the specification as suggested. As such, withdrawal of the Examiner's objections to the Abstract is respectfully requested.

The Examiner has also objected to the specification due to certain informalities. Specifically, the Examiner has requested that all occurrences in the specification that state that the "illumination bulb is connected to a light source" should be changed to is connected to "power source." As the Examiner points, an illumination bulb is a light source. Applicant has amended the specification as suggested by the Examiner and withdrawal of the Examiner's objections is respectfully. It noted, however, that the illumination bulb may fiber optic illuminator operatively connected to a light source by a fiber optic cable. This arrangement is reflected in paragraph 47 of the specification. As such, the illumination bulb could be connected to a light source.

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The Examiner has objected to claim 1 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention. More specifically, in claim 1, the phrase “first direction” lacks antecedent basis. Applicant has amended claim 1 to overcome the lack of antecedent basis and withdrawal of the Examiner’s rejection under 35 U.S.C. § 112, second paragraph, is respectfully requested.

The Examiner has also objected to claims 16 and 35 because such claims indicate that the illumination bulbs are connected to a light source. Applicant has amended such claims to indicate the illumination bulbs are operatively connected to a power source. This, of course, includes the arrangement wherein a fiber optic illuminator (the illumination bulb) is connected to a power source through a fiber optic cable and a light source. In view of the foregoing, withdrawal of the Examiner’s objection to such claims is respectfully requested.

The Examiner has rejected claims 1-3, 6, 10, 12-13, 15-16, 40-44, 47-50, 54-58, 61-62 and 64-66 under 35 U.S.C. § 102(b) as being anticipated by Yoon, U.S. Patent No. 6,066,090. In addition, the Examiner has rejected claims 1-3, 5-7, 10, 12-13, 40-42, 44, 46-49, 51, 53-56, 58, 60-62 and 66 under 35 U.S.C. § 102(b) as being anticipated by Irion, U.S. Patent No. 5,166,787. Claims 1-3, 6-10, 13, 14, 40, 42, 47, 54-56, 62 and 63 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Mitsui, U.S. Patent No. 3,889,662. Finally, the Examiner has rejected claims 45, 52 and 59 under 35 U.S.C. § 103(a) as being unpatentable over the Yoon ‘090 patent in view of Ueda, U.S. Patent No. 4,832,473. As hereinafter described, Applicant has amended the pending claims to more particularly define the invention for which protection is sought. Reconsideration of the examiner’s rejection is respectfully requested in view of the following comments.

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Claim 1 defines a endoscope including a shaft having distal and proximal ends. The shaft defines a hollow channel therethrough. A first lens is adjacent the distal end of the shaft for receiving a first image in a first direction. A catheter is receivable in the hollow channel of the shaft for extension or retraction therethrough. A second lens is adjacent the distal end of the catheter. The second lens is movable with respect to the first end of the lens so as to receive a second image in a second direction. The second direction is at a predetermined angle to the first direction. As hereinafter described, none of the cited references shows or suggests the endoscope incorporating first and second lens and a catheter receivable in a hollow channel of a shaft for extension or retraction thereto wherein the second lens is adjacent the distal end of the catheter.

The Yoon '090 patent discloses an endoscope having two or more branches. Each branch includes a source of illumination and a lens train, fiber optic bundle or solid state image receiving device. Each of these branches is independently manipulatable or steerable in order to produce an image from a distinct point of view within the body. The images are juxtaposed on a video monitor for simultaneous viewing by a surgeon. It is noted that nothing in Yoon '090 patent shows or suggests an endoscope having a single shaft with multiple lens, as required by independent claim 1. Further, nothing in the '090 patent shows or suggests providing one of the lens at a distal end of a catheter receivable within a hollow channel extending through such shaft. Such a structure is entirely absent from the '090 patent, As such, it is believed that independent claim 1 defines over the cited reference.

The Irion '787 patent discloses an endoscope having a video device arranged at the distal end of an endoscope shaft. The video device is connected by means of a transmission system to a supply unit arranged at the proximal end of the endoscope shaft. The video device includes a first lens and a rear view module which is pivotable about an axis parallel to the axis of the endoscope shaft. As best seen in Figs. 6a-6c, the rear view module is pivotably attached to the distal end of the endoscope shaft to provide a different viewing angle than that of a first lens. It is noted, however,

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that nothing in the '787 patent shows or suggests a catheter extending through a hollow channel in the shaft for extension and retraction therethrough, as required by independent claim 1. Such an element is entirely absent from the Irion '787 patent.

The Mitsui '662 patent discloses an endoscope having a plurality of image guided fiber bundles disposed therein. In the Examiner's opinion, the endoscope includes a first lens identified by the reference numeral 19 for receiving images in a first direction and a second lens identified by the reference numeral 20 for receiving images in a second direction at an angle to the first direction. However, like the Irion '787 patent, nothing in the '662 patent shows or suggests providing a catheter receivable in a hollow channel of a shaft for extension and retraction therethrough, as required by independent claim 1. Such a structure is entirely absent from the Mitsui '662 patent.

Given that none of the cited references show or suggest each and every limitation of independent claim 1, it is believed that independent claim 1 defines over such references and is in proper form for allowance. Claims 3, 10, 12-16, 41, 43 and 67 depend either directly or indirectly from independent claim 1 and further define an endoscope not shown or suggested in the prior art. It is believed that claims 3, 10, 12-16, 41, 43 and 67 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.

Claim 47 defines an endoscope system for examining a hollow body component. The endoscope system includes an endoscope having an outer periphery and a distal end housing a first image lens for receiving images in a first direction. The endoscope defines a hollow channel therethrough. A catheter is received within the channel of the endoscope and has proximate and distal ends. A rear view module is positioned at the distal end of the catheter and includes a second image lens. At least a portion of the module is movable between a first position and a second position wherein the second lens receives images in a second direction at an angle to the first direction.

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As heretofore described with respect to independent claim 1, nothing in any of the cited references shows or suggests an endoscope system having a first and second image lens and a catheter extending through a channel in the endoscope wherein the second lens of the rear view module is positioned adjacent the distal end of the catheter. Such a structure is entirely absent from all of the cited references. Consequently, it is believed that independent claim 47 defines over the cited references and is in proper form for allowance.

Claims 48-50 depend either directly or indirectly from independent claim 47 and further define an endoscope system not shown or suggested in the prior art. It is believed that claims 48-50 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.

Claim 54 defines an endoscope including a first lens for receiving a first image in a first direction. The shaft receives the first lens therein. The shaft defines a hollow channel therethrough. A second lens receives a second image in a second direction. The second direction is at a predetermined angle to the first direction. A catheter is received within the channel of the shaft and has proximate and distal ends. A rear view module housing second lens is operatively connected to the distal end of the catheter.

Once again, as heretofore described with respect to independent claims 1 and 47, nothing in any of the cited references shows or suggests an endoscope having first and second lens and a catheter received within the channel through the endoscope wherein a rear view module housing the second lens is connected to the distal end of the catheter. Nothing in any of the cited references shows or suggests such a structure. Consequently, it is believed that independent claim 54 defines over the cited references and is in proper form for allowance.

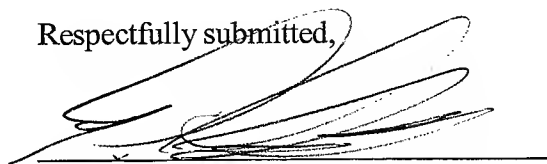
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Claims 55-57 and 61-66 depend either directly or indirectly from independent claim 54 and further define an endoscope not shown or suggested in the prior art. It is believed that claims 55-57 and 61-67 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.

Applicant believes that the present application with claims 1, 3, 10, 12-16, 41, 43, 47-50, 55-57 and 61-67 is in proper form for allowance and such action is earnestly solicited. The Director was authorized to charge payment for a one month Extension of Time in the amount of \$60.00 in the originally filed Response. As such, Applicant believes that no other fees are due in connection with this Amendment. However, if Examiner considers any fees due in conjunction with this or any future communication, authorization is given to charge payment of such fees or credit any overpayment to Deposit Account No. 50-1170.

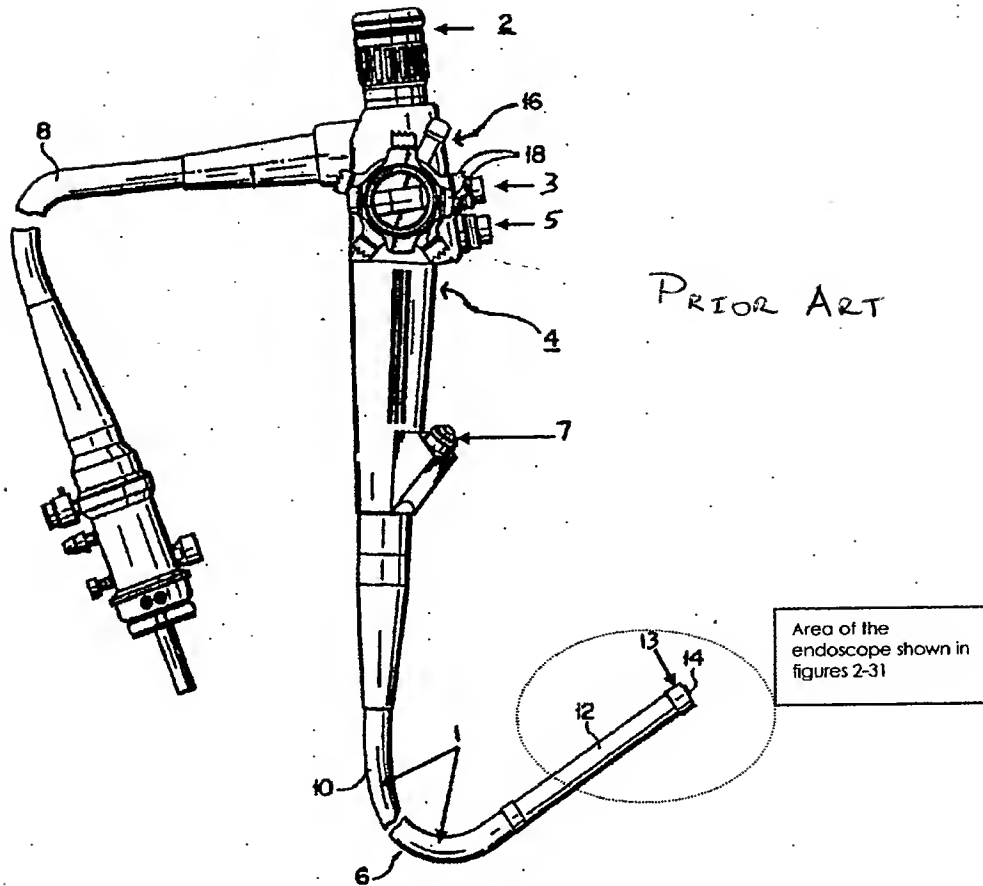
Should the Examiner have any questions or comments regarding this Response which would expedite the prosecution of the application, the Examiner is invited to contact the undersigned at the telephone number appearing below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Peter C. Stomma', is written over a horizontal line.

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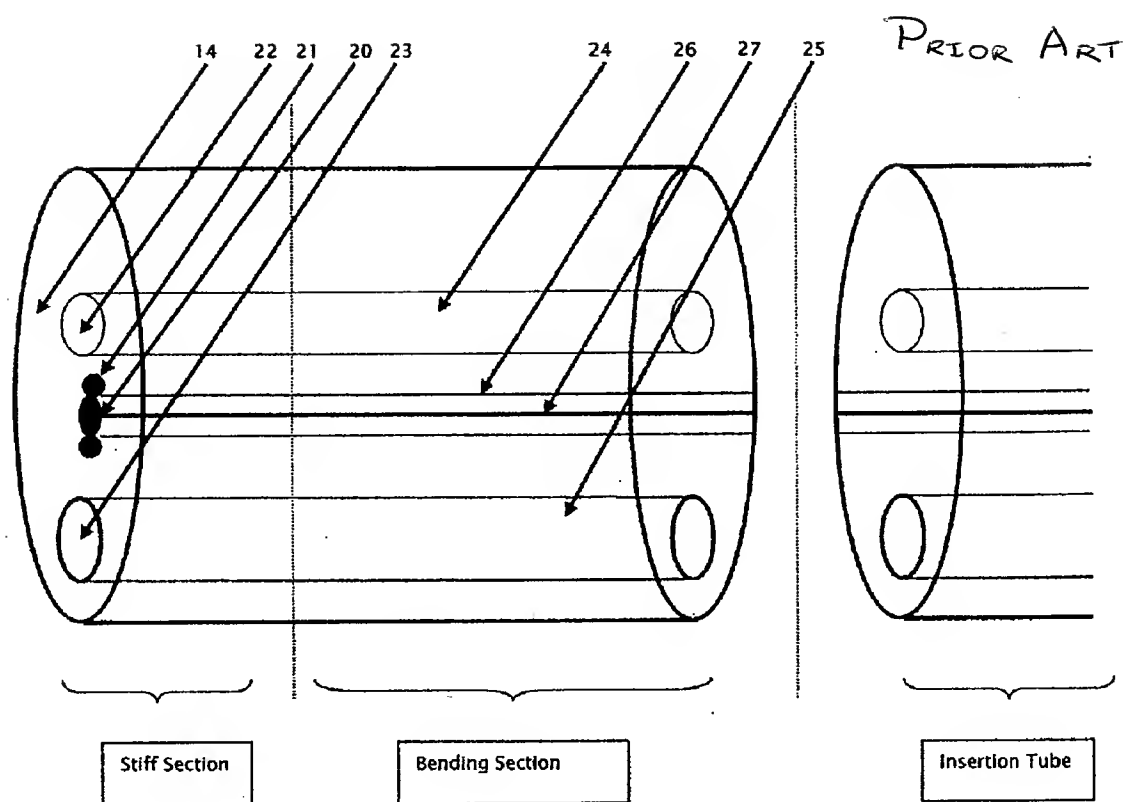


FIG. 2

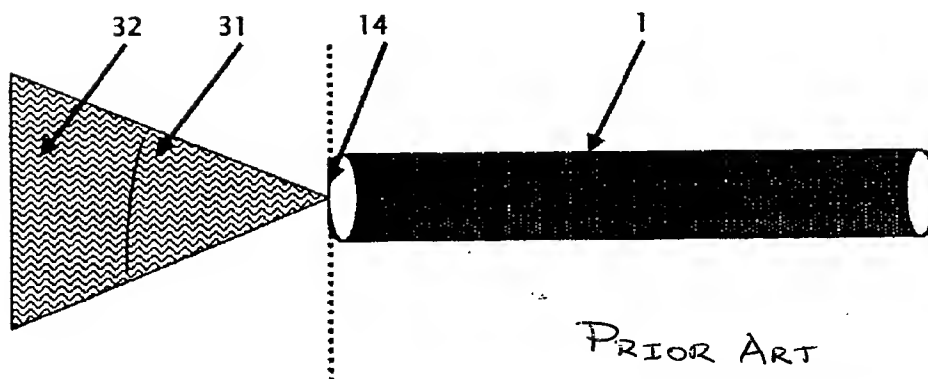
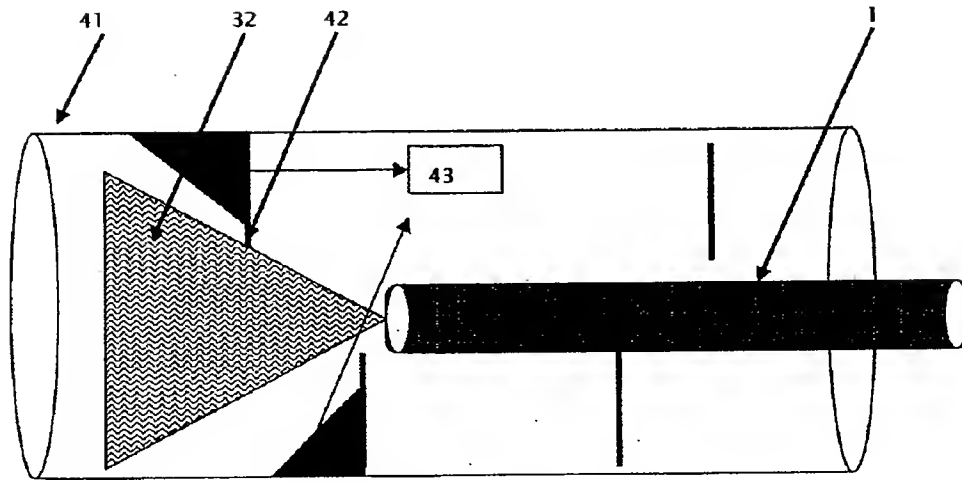
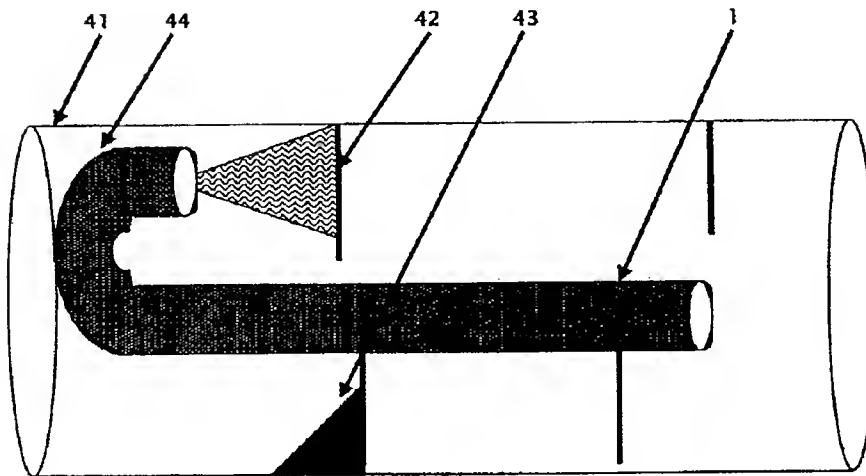


FIG. 3



PRIOR ART

FIG. 4A



PRIOR ART

FIG. 4B